



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

AUG 11 2000

400 Seventh St., S.W.
Washington, D.C. 20590

DOT-E 9830
(FIFTH REVISION)

EXPIRATION DATE: April 30, 2002

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Worthington Cylinder Corporation
Columbus, OH
2. PURPOSE AND LIMITATIONS:
 - a. This exemption authorizes the manufacture, mark, sale and use of a non-DOT specification cylinder conforming with all regulations applicable to a DOT specification 4BA cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from any Hazardous Materials Regulation (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in the development of this exemptions only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.201, 173.202, 173.203, 173.302(a), 173.304(a) and (d) in that a non-DOT specification cylinder is not authorized except as specified herein.
5. BASIS: This exemption is based on the application of Worthington Cylinder Corp. dated May 8, 2000, submitted in accordance with § 107.105 and the public proceeding thereon.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Division 2.1 and Division 2.2 materials authorized in DOT 4BA cylinders	2.1 or 2.2	As appro- priate	N/A
Division 3 liquids authorized in DOT 4BA cylinders	3	As appro- priate	I, II or III
Division 6.1 liquids authorized in DOT 4BA cylinders	6.1	As appro- priate	I, II, or III

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification cylinder designed and fabricated in conformance with DOT 4BA specification (§§ 178.35 and 178.51) except as follows:

§ 178.35(f) *Marking.*

Applies except that the cylinders must be marked with "DOT-E 9830" in lieu of "DOT 4BA" followed by the service pressure.

§ 178.51(b) *Steel.*

The steel used must be ASTM A 240 Type 304L, or 316L stainless steel. Chemical compositions are as follows:

Composition (%) for ASTM A240

<u>Type</u>	<u>304L</u>	<u>316L</u>
Carbon (Max.)	0.03	0.03
Manganese (Max.)	2.00	2.00
Phosphorus (Max.)	0.045	0.045
Sulphur (Max.)	0.030	0.030

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Silicon (Max.)	1.00	1.00
Nickel	8.0-11.0	10.0-14.0
Chromium	18.0-20.0	16.0-18.0
Molybdenum	----	2.0-3.0
Copper (Max.)	----	0.50
Iron	Balance	Balance

§ 178.51(f) *Wall thickness.*

(1) For outside diameters over 6" the minimum wall thickness shall be 0.078". In any case the minimum wall thickness shall be such that the calculated wall stress at minimum test pressure (§ 178.51(i)) shall not exceed 40,000 psi.

* * *

§ 178.51(g) *Heat treatment.*

Heat treatment is not required.

§ 178.51(i) *Hydrostatic test.*

(1) Each cylinder shall be hydrostatically or pneumatically pressurized to a minimum 2 times the service pressure and held for 10 seconds at the test pressure and show no defects.

(2) One finished cylinder selected at random out of each lot of 200 or less successively produced shall be hydrostatically pressurized to 4 times the marked service pressure and the pressure must be held for 60 seconds without bursting or leaking.

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§ 178.51(k) *Elongation.*

Applies except elongation must be at least 10% for 24t X 6t specimens.

b. TESTING - The retest must be performed by the cylinder manufacturer or a person holding a current retester's identification number issued by the Research and Special Programs Administration in accordance with § 173.34(e).

(1) Each cylinder which is used for a hazardous material non-corrosive to the cylinder must be reinspected and hydrostatically retested within 10 years of the manufacture date and then be requalified at least every 5 years. The retested cylinders must be subjected to an internal hydrostatic pressure equal to at least two times the marked service pressure without determination of expansion. The cylinders must be carefully examined under the test pressure and removed from service if leaks or other harmful defects exist.

(2) Each cylinder which is used for a hazardous material that is corrosive to the cylinder must be reinspected and hydrostatically retested within 5 years of the manufacture date and then be requalified at least every 5 years. The cylinders must be visually inspected internally and externally in accordance with CGA Pamphlets C-6. The hydrostatic retest method may only include the direct expansion or water jacket volumetric expansion test. Each cylinder must be subjected to a pressure of at least two times the marked service pressure.

c. OPERATIONAL CONTROLS - The quantity limitations in § 172.101, Column 9(B) apply to shipments made under this exemption.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

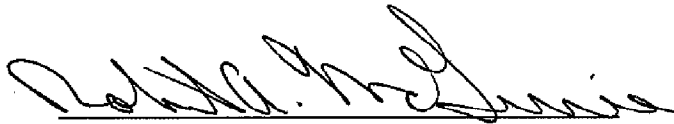
- b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.
- c. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.
- d. Each packaging manufactured under the authority of this exemption must be marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.
- e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only. See paragraph 7.c.
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to transport packages covered by this exemption. The shipper shall furnish a current copy of this exemption to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued at Washington, D.C.



Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

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(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.
Attention: DHM-31.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, S.W., Washington, DC 20590-0001, Attention: Records Center, 202-366-5046.

PO: cwf